A. Nikitenko Imperial College, UK / ITEP Moscow

Tagging jets in HF at L1

- size of HF jet window and pile-up jet rejection v.s. efficiency
- L1 jet shape information and pile-up jet rejection v.s. efficiency

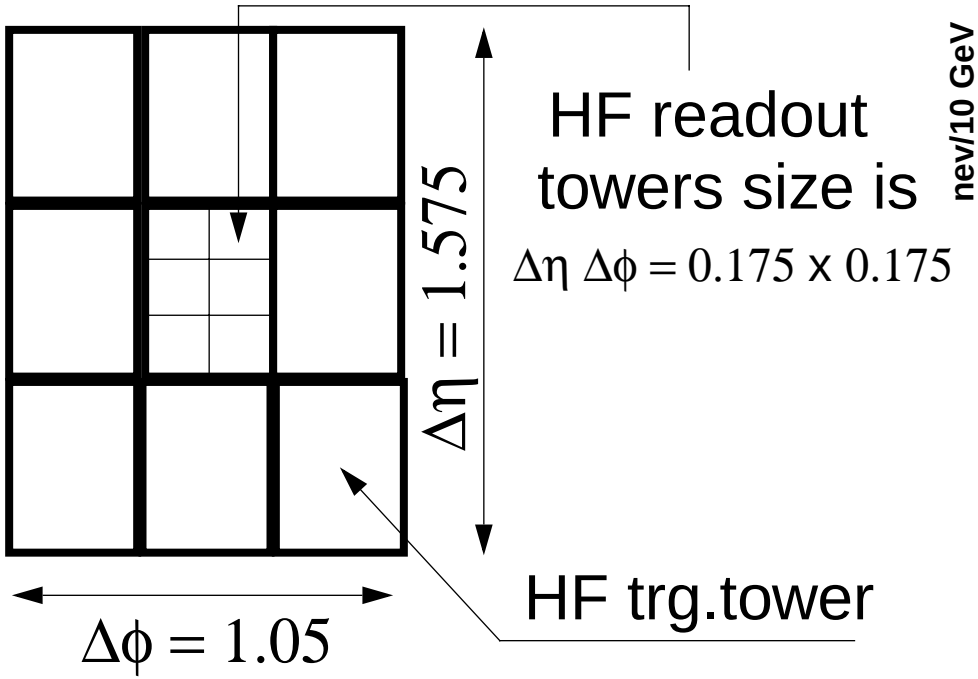
L1 HF Jet Window

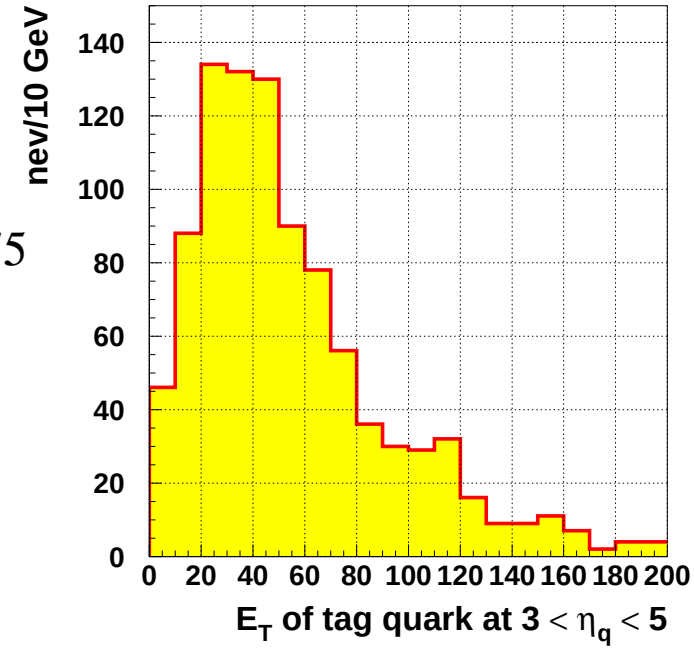
Present scheme :

HF L1 Jet Window is
3x3 HF trigger towers

HF trigger tower is 3x2
HF readout towers

What is optimal Jet Window size to trigger on tagging jets in HF ?





Size of HF Jet Window and pile-up jet rejection v.s. efficiency

Jet Window is 3x3 trigger towers. Size of the trigger tower is varied

size of HF trigger tower N_η x N_ϕ off line HF towers	Jet Window size, $\Delta\eta$ x $\Delta\phi$
1 x 1	0.525 x 0.525
2 x 2	1.050 x 1.050
3 x 2	1.575 x 1.050

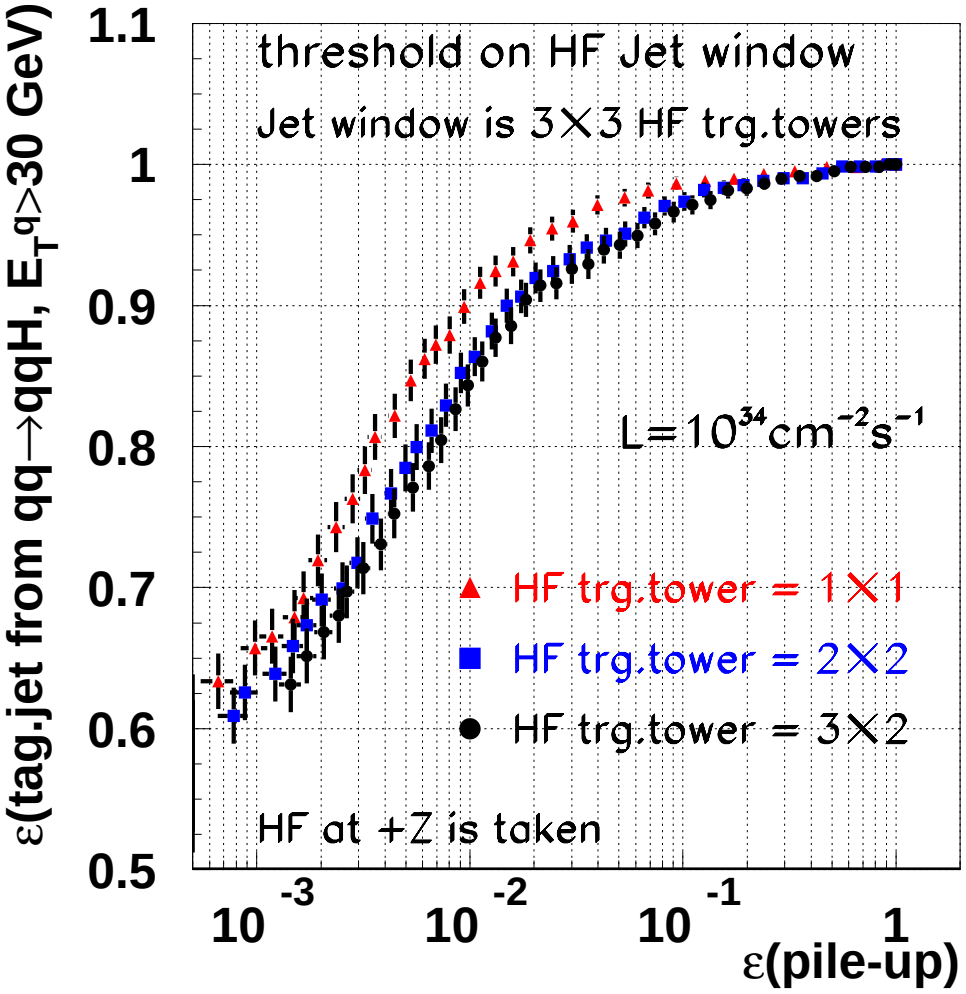
- 1 x 1 is the best
- 2 x 2 & 3 x 2 are very similar

Threshold for supression 100

18 GeV for 1x1

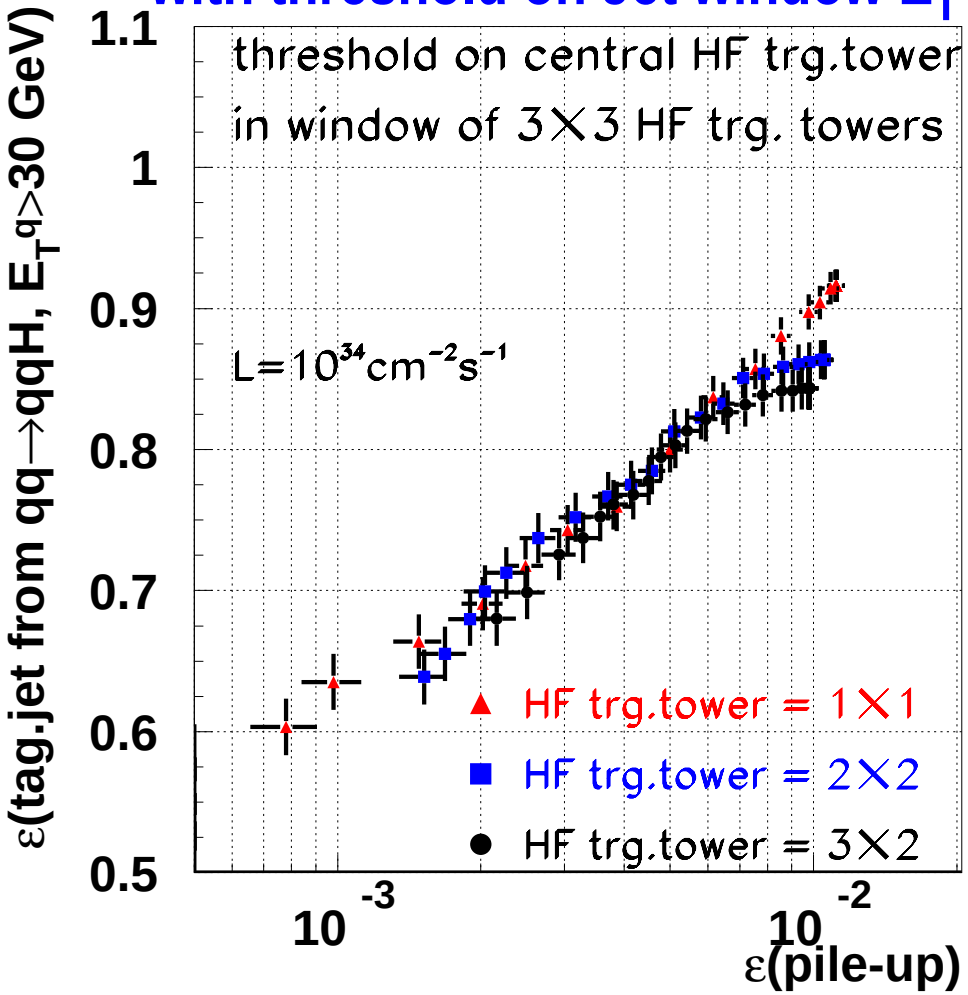
25 GeV for 2x2

28 GeV for 3x2



L1 jet shape information and pile-up jet rejection v.s. efficiency (I)

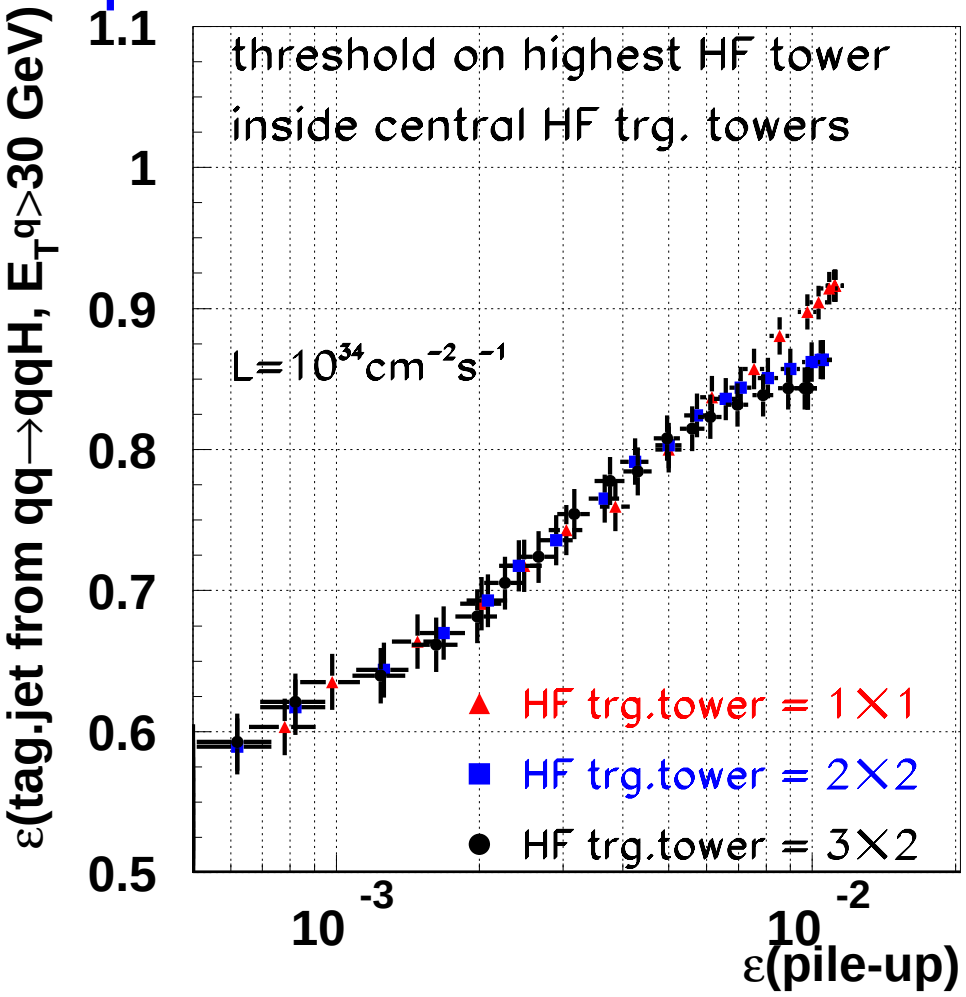
cutoff on central trigger tower after supression ~ 100 with threshold on Jet window E_T



there is no difference

L1 jet shape information and pile-up jet rejection v.s. efficiency (II)

cutoff on highest E_T tower inside central trigger tower after supression ~ 100 with threshold on Jet window E_T



there is no difference

Do we need shape variable ?

solid line contour -
ε(pile-up) = 100

dased line contour -
ε(pile-up) = 500

numbers -
ε(tag.jet) for
ε(pile-up) = 100

combined cut on E_T of central tower and jet window is more effective